

A review of the little known genus *Wockia* (Lepidoptera: Urodidae) in Russia

Обзор малоизвестного рода *Wockia* (Lepidoptera: Urodidae) в фауне России

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Three species of the genus *Wockia* Heinemann, 1870, which are so far known in Russia are reviewed; their male and female genitalia are illustrated, and a key for identification is provided. Two species, *W. koreana* Sohn, 2008, and *W. magna* Sohn, 2014, which were recently described from East Asia, are for the first time reported from Russia. The investigation of the holotype of *W. funebrella* Heinemann, 1870, discovered in the collection of the Zoological Institute RAS (St Petersburg), confirmed that this species is a junior subjective synonym of *W. asperipunctella* (Bruand, 1851). The distribution of Palearctic species of the genus is discussed shortly.

Проведена ревизия материала по представителям малоизвестного рода *Wockia* Heinemann, 1870, фауны России с использованием признаков строения копулятивного аппарата и дан ключ для определения видов. Впервые для России отмечены недавно описанные восточноазиатские виды *W. koreana* Sohn, 2008 и *W. magna* Sohn, 2014. Переисследован голотип вида *W. funebrella* Heinemann, 1870, обнаруженный в коллекции Зоологического института РАН (Санкт-Петербург), и подтверждена его синонимия с *W. asperipunctella* (Bruand, 1851). Кратко обсуждается общее распространение палеарктических представителей рода.

Key words: moths, taxonomy, Russia, Lepidoptera, Urodidae, *Wockia*, new synonymy, distribution, key for identification

Ключевые слова: моли, таксономия, Россия, Lepidoptera, Urodidae, *Wockia*, новая синонимия, распространение, определительная таблица

INTRODUCTION

The genus *Wockia* Heinemann, 1870, originally described in Elachistidae, was subsequently placed in Yponomeutidae (Fletcher, 1929; Leraut, 1980) or in Plutellidae (Meyrick, 1914); the last placement was strongly supported by Friese (1960) and accepted by Zagulajev (1981). However, Kyrki (1984) found similarities between *Wockia* and several Neotropical genera related to *Urodus* Herrich-Schäffer, 1854; later on, he removed this group from Yponomeutoidea and erected a new family, Urodidae,

of uncertain position among the ditrysian Lepidoptera (Kyrki, 1988). Nielsen (1989) first treated urodids as a separate superfamily, Urodoidea, and this taxonomic rank is now widely accepted (Buszko, 1996; Dugdale et al., 1998; Sinev, 2008; Sohn, 2014). The family includes six genera with nearly 70 species and is most diverse in the Neotropics (Kyrki, 1988; Sohn, 2014).

For a long time, the genus thought to be monotypical, with a single European species, *Wockia asperipunctella* (Bruand, 1851), but it appeared to occur also in North America (Heppner, 1997; Landry, 1998), In-

onesia (Kyrki, 1986), South Korea (Sohn, Adamski, 2008), Vietnam (Sohn, Park, 2009), Japan (Sohn, 2014), Brazil (Heppner, 2008), Mexico (Adamski, 2009), and Jamaica (Sohn, 2013). Nevertheless, *Wockia* remains one of the smallest genus of Urodidae with only ten species, eight of which were described during the past decades. To date, only *W. asperipunctella* was reported from the west and southwest of the European part of the former USSR, but exact locality data have not been published (Zagulajev, 1981). The examination of additional material demonstrated the occurrence in Russia of three different species, two of which are so far found only in the southern part of the Far Eastern region. These species are reviewed below on the basis of the materials deposited in the Zoological Institute, Russian Academy of Sciences, St Petersburg.

TAXONOMY

Order LEPIDOPTERA

Family URODIDAE

Genus *Wockia* Heinemann, 1870

Wockia Heinemann, 1870, Schmett. Deutschl. u. Schweiz, 2 (2): 103.

Patula Bruand, 1851: 50; type species *Patula asperipunctella* Bruand, 1851, by monotypy; junior homonym of *Patula* Held, 1837, Isis von Oken, Leipzig 1837: 916 – Mollusca.

Wockea Reutti, 1898, Verh. Naturwiss. Ver. Karlsruhe, 12: 291; unjustified emendation of *Wockia* Heinemann, 1870.

Wockeia Spuler, 1910, Schmett. Eur., 2: 443; unjustified emendation of *Wockia* Heinemann, 1870.

Type species *Wockia funebrella* Heinemann, 1870 = *Patula asperipunctella* Bruand, 1851, by monotypy.

Diagnosis. Small moths with relatively dull patterns and raised scales on the forewings. Antennae lamellate in males, filiform in females. Labial palpi porrect, short, thickened medially with raised scales, blunt apically. All radial, medial and antero-cubital veins of both wings present and separate.

Uncus absent, gnathos rudimentary; valva deeply divided terminally, with digitate dorsal lobe. Ovipositor telescopic; ductus bursae dorsoventrally flattened, sclerotized; corpus bursae with two signa.

Distribution. Palaearctic, Nearctic, Neotropical, Oriental. One species, *Wockia asperipunctella*, is widely distributed in the Holarctic; other species have rather small geographic ranges.

Biology. Larvae feed externally on leaves of Salicaceae, including *Salix*, *Populus*, and *Casearia*.

A key to species of *Wockia* from Russia and their review

1. Larger, wingspan 19–20 mm. Forewings indistinctly maculate (Fig. 3). In male genitalia valva elongate, splitted in two lobes (Figs 8, 9). In female genitalia bursa copulatrix very long, 7 times as long as its width (Fig. 12)..... ***W. magna***
- Smaller, wingspan 15–18 mm. Forewings more or less uniformly grey, but with a transverse band of raised black scales. In male genitalia valva wide, splitted in three lobes. In female genitalia bursa copulatrix relatively short, less than 3 times as long as its width .. 2
2. Larger, wingspan 16–18 mm. Forewing with narrow, sometimes indistinct transverse line of raised blackish scales (Fig. 1). In male genitalia medial lobe of valva large, strongly dilated apically; aedeagus cylindrical (Figs 4, 5). In female genitalia antrum much shorter than bursa copulatrix; corpus bursae elongate (Fig. 10)..... ***W. asperipunctella***
- Smaller, wingspan 15–16 mm. Forewing with clearly visible transverse band of raised black scales (Fig. 2). In male genitalia medial lobe of valva short, pointed apically; aedeagus bottle-shaped (Figs 6, 7). In female genitalia antrum much longer than bursa copulatrix, sclerotized; corpus bursae rounded (Fig. 11) ***W. koreana***

Wockia asperipunctella (Bruand, 1851) (Figs 1, 4, 5, 10)

Patula asperipunctella Bruand, 1851, Mém. Soc. d'emul. Doubs, (1)3(3): 50; type locality: France, environs of Besançon.

Figs 1–3. *Wockia*, moths: 1, *W. asperipunctella*, female, holotype of *W. funebrella*, Obernigk; 2, *W. koreana*, male, Dvoryanka; 3, *W. magna*, female, Gornotajozhnoe.

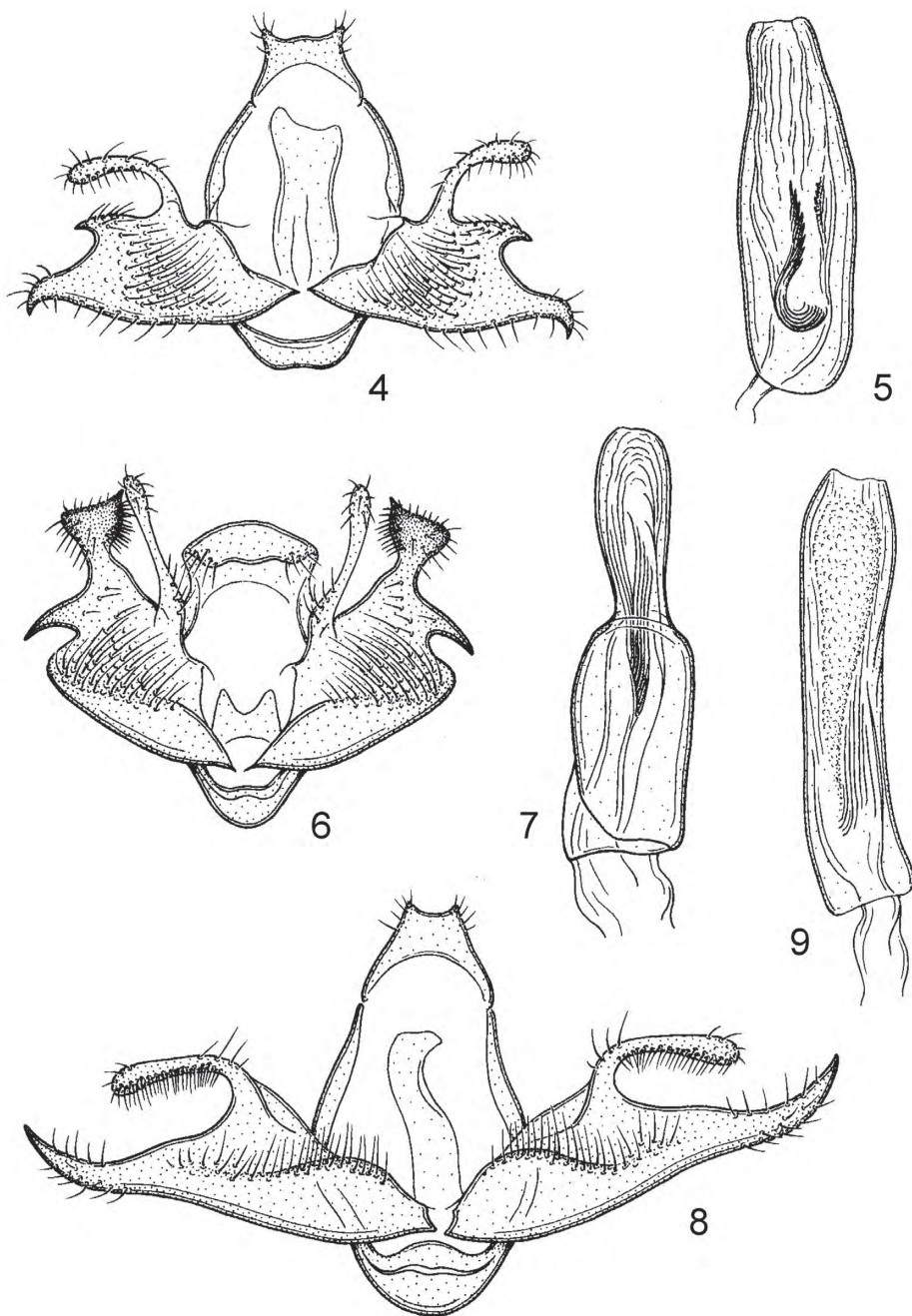


Wockia funebrella Heinemann, 1870, Schmett. Deutschl. u. Schweiz, 2 (2): 103; type locality: Poland, Obernigk.

Material examined. **Russia:** 1 male, *Lenin-gradskaya Oblast*, Nizovskaya, ex l., 26 April 1940, A. Gerasimov leg.; 2 males, *Tverskaya Oblast*, Udomelskiy District, Baglaevo, 16–22 June 2012, and Doronino, 4–10 June 2013, A. Korobkov leg.; 1 male, *Orlovskaya Oblast*, Nikol'skoe, 8 June 1926, A. Kurentsov leg.; 1 male, *Republic of Komi*, Letka, 2 June 1976, K. Sedykh leg.; 1 fe-

male, *Southern Urals*, Yanvartsevo, ur. Embulat, 19 June 1950, V. Kuznetsov leg.; 3 females, *Altai Territory*, Kosikhinskiy District, 2 km W Ozero-Krasilovo, 17–24 June 2014, L. Snigireva leg. **Poland:** holotype of *Wockia funebrella* Hein. (female), "Obernigk, 9 June [18]57, coll. Wocke".

Distribution. Sweden, Finland, Norway, Estonia, Latvia, Poland, Czechia, Slovakia, Germany, France, Italy, Austria, Hungary, Croatia, Romania, Russia (European part and Altai Territory); North America.



Figs 4–9. *Wockia*, male genitalia: 4, 5, *W. asperipunctella*; 6, 7, *W. koreana*; 8, 9, *W. magna*. General view (4, 6, 8); aedeagus (5, 7, 9).

Biology. Larvae feed externally on leaves of different *Salix* and *Populus* (Salicaceae).

Remarks. The species was previously mentioned for the European part of the for-

mer USSR (Zagulajev, 1981) and for the Karelian and North-Western regions of European Russia (Sinev, 2008). The material examined indicates that *W. asperipunctella*

has a scattered distribution in the temperate zone of Russia from Leningradskaya Oblast in the west to Altai Territory in the east. The records from the Russian Far East (Sinev, 2008) are based on the misidentification and actually refer to the two following species. It remains uncertain whether this species is native to North America or it has been introduced to this continent: it was first reported from Northeastern USA in 1925. However, Landry (1998) notes that this species occurs in undisturbed primary forests in British Columbia, which argues for its Holarctic distribution.

***Wockia koreana* Sohn, 2008**
(Figs 2, 6, 7, 11)

Wockia koreana Sohn, in Sohn et Adamski, 2008, Proc. Entomol. Soc. Wash., 110(3): 557; type locality: South Korea, Gangwon Province, Hwacheon.

Material examined. **Russia:** 1 male, *Amurskaya Oblast*, near Blagoveshchensk, agrobiological station, 11–12 July 2013, light trap, A. Streltsov, A. Barbarich and A. Barma leg.; 1 female, same locality, 20–25 July 2014, light trap, A. Streltsov and A. Barbarich leg.; 1 male, *Jewish Autonomous*

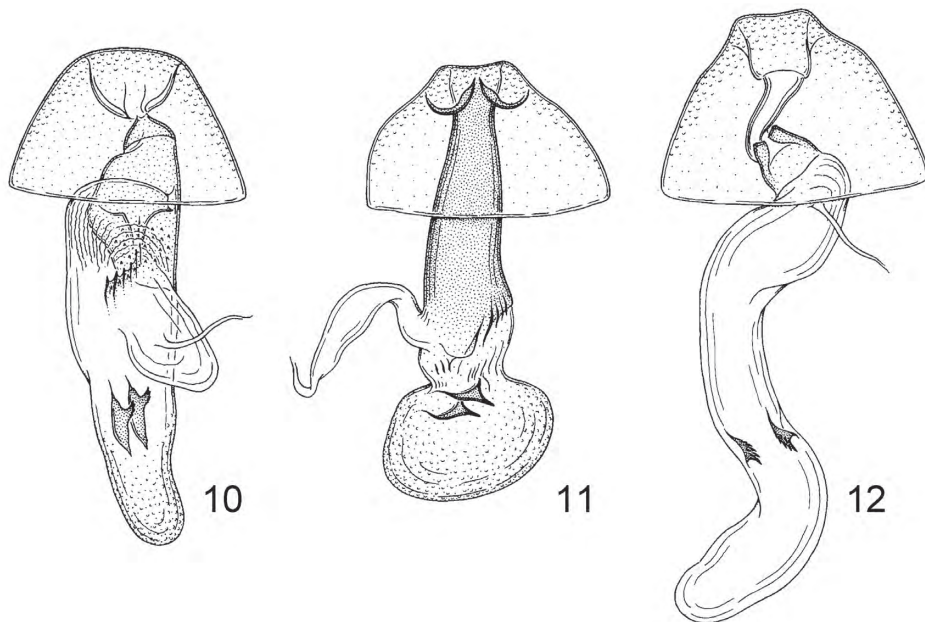
Oblast, Sutarskiy District, 40 km S Birakan, Bidzhan river, 13–15 July 2005, at light, S. Sinev leg.; 1 male, *Jewish Autonomous Oblast*, Obluchenskiy District, 5 km E Radde, Lagar stream, 17–19 July 2005, at light, S. Sinev leg.; 5 males, *Primorskiy Territory*, Pozharskiy District, Verkhniy Pereval, 12–16 July 1990, at light, S. Sinev leg.; 2 males, 1 female, *Primorskiy Territory*, Ussurijskiy District, Gornotajozhnoe, 43°42'N 132°09'E, 11 July 1994, at light, M. Ponomarenko leg.; 3 males, 1 female, *Primorskiy Territory*, Pogranichniy District, Barabash-Levada, 13–15 July and 6 August 1989, at light, S. Sinev leg.; 3 males, *Primorskiy Territory*, Khankaiskiy District, 3 km NNE Dvoryanka, 44°54'15''N 131°35'51''E, 150 m a.s.l., 8–10 July 2015, at light, S. Sinev leg.

Distribution. South Korea, Russia (*Amurskaya Oblast*, *Jewish Autonomous Oblast*, *Primorskiy Territory*). **New to Russia.**

Biology. In Korea, the larvae feed externally on leaves of *Salix pseudolasiogyne* Lev., *Salicaceae* (Sohn, Adamski, 2008).

***Wockia magna* Sohn, 2014**
(Figs 3, 8, 9, 12)

Wockia magna Sohn, 2014, Zoological Science, 31: 260; type locality: Japan, Honshu, Tyubu-Nagano.



Figs 10–12. *Wockia*, female genitalia (ovipositor removed): 10, *W. asperipunctella*; 11, *W. koreana*; 12, *W. magna*.

Material examined. Russia: 1 male, *Amurskaya Oblast*, Zeya Nature Reserve, Bol'shaya Erakingra river, 54°55'N 126°52'E, 10–11 July 2012, light trap, V. Dubatolov leg.; 1 male, same locality, 24–25 July 2013, light trap, V. Dubatolov leg.; 1 male, *Amurskaya Oblast*, Zeya Natural Reserve, Kamenushka, 54°07'N 126°43'E, 15–16 August 2014, at light trap, V. Dubatolov leg.; 1 male, *Amurskaya Oblast*, city of Zeya, oak forest, 53°46'N 127°17'E, 9–10 July 2012, at light trap, V. Dubatolov leg.; 1 male, *Jewish Autonomous Oblast*, Bastak Nature Reserve, 25 km N Birobidzhan, 20–22 July 2005, at light, S. Sinev leg.; 2 females, *Primorskiy Territory*, Gornotajozhnoe, 20 km E Ussurijsk, 2 July 1982, at light, S. Sinev leg.; 1 male, *Primorskiy Territory*, Khasanskiy District, 20 km N Barabash, Gusevskiy mine, 30 July 1984, at light, P. Ivinskis leg.; 1 female, *Primorskiy Territory*, Pogranichniy District, Barabash-Levada, 15 July 1989, at light, S. Sinev leg.; 1 male, *Primorskiy Territory*, Khasanskiy District, Barabash, 43°10'N 131°29'E, 18–27 July 2010, at light, A. Streltsov, P. Osipov and A. Barbarich leg.

Distribution. South Korea, Japan (Honshu), Russia (*Amurskaya Oblast*, *Jewish Autonomous Oblast*, *Primorskiy Territory*).
New to Russia.

Biology unknown.

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